


EXHIBIT 12

U.S. Patent No. 10,135,682 (the “’682 Patent”) Exemplary Infringement Chart

Cox operates and maintains a nationwide television and data network through which it sells, leases, and offers for sale products and services, including the Arris SB6183 cable modem, Arris CM8200 cable modem, Technicolor CGM4141 cable modem, Technicolor CGM4331 cable modem, and products that operate in a similar manner (“Accused Cable Modem Products”), as well as the Arris AX013ANC STB, Arris AX013ANM STB, Pace PX022ANC STB, Pace PX022ANM STB, Samsung SX022ANC STB, Samsung SX022ANM STB, and products that operate in a similar manner (“Accused Set Top Products”). Cox provides cable television and internet services (“Accused Services”) via the lease, sale, and/or distribution of the Accused Cable Modem Products and/or the Accused Set Top Products. Cox literally and/or under the doctrine of equivalents infringes the claims of the ’682 Patent under 35 U.S.C. § 271(a) by making, using, selling, offering for sale, and/or importing the Accused Services, Accused Cable Modem Products, and/or the Accused Set Top Products.

#	U.S. Patent No. 10,135,682	Cox Accused Products and Services
1a	A method comprising:	The Cox Accused Services perform the claimed method utilizing, for example, including a Cable Modem Termination System (“CMTS”) and/or Converged Cable Access Platform (“CCAP”) operated by Cox and at least one cable modem located at each subscriber location, including, for example, the Arris SB6183 cable modem, Arris CM8200 cable modem, Technicolor CGM4141 cable modem, Technicolor CGM4331 cable modem, and products that operate in a similar manner.
1b	determining, by a cable modem termination system (CMTS), for each cable modem served by said CMTS, a corresponding signal-to-noise ratio (SNR) related metric;	<p>The CMTS and/or CCAP determines, for each cable modem served by said CMTS and/or CCAP, a corresponding signal-to-noise ratio (SNR) related metric.</p> <p>Cox utilizes CMTSs and/or CCAPs to send and receive packets to downstream cable modems over the Internet. For the purposes of this analysis, the Technicolor CGM4141 will be assessed. However, Cox’s services are compatible with a variety of cable modems for consumers to utilize in conjunction with their services.</p> <p>Cable modems, such as the Technicolor CGM4141, include chips capable of receiving and transmitting performance data to the CMTS and/or CCAP, such as Broadcom’s BCM3390 system-on-a-chip (“SoC”).</p>

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		 <p>Accordingly, cable modems, such as the Technicolor CGM4141, are capable of bidirectional communications with the CMTS and/or CCAP.</p> <p>Cox utilizes its CMTSs and/or CCAPs to determine a corresponding signal-to-noise ratio (SNR) related metric for each cable modem served by said CMTS. For example, the CMTS and/or CCAP utilizes a spectral analysis engine associated with an upstream receiver to gather detailed information about upstream channel noise.</p>

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1c	assigning, by said CMTS, each cable modem among a plurality of service groups based on a respective corresponding SNR-related metric;	<p>A service group includes one or more cable modems. The CMTS and/or CCAP assigns each cable modem among a plurality of service groups based on a respective corresponding SNR-related metric.</p> <p>Specifically, the CMTS and/or CCAP profiles downstream cable modems to determine characteristics of the communication channel between the CMTS and/or CCAP and the downstream cable modems. On informed belief, the CMTS and/or CCAP allows a fixed number of modulation profiles to be defined. The CMTS and/or CCAP organize the downstream cable modems into groups and all the cable modems in a particular group use a modulation profile assigned to the group.</p>
1d	generating, by said CMTS for each one of said plurality of service groups, a composite SNR-related metric based at least in part on a worst-case SNR profile of said SNR-related metrics corresponding to said one of said plurality of service groups;	<p>The CMTS and/or CCAP generate, for each one of said plurality of service groups, a composite SNR-related metric based at least in part on a worst-case SNR profile of said SNR-related metrics corresponding to said one of said plurality of service groups.</p> <p>Specifically, the CMTS and/or CCAP generate SNR-related metrics based on a worst-case SNR profile of each service group. For example, the CMTS and/or CCAP selects a modulation profile based on worst-case noise that is expected on the upstream channel and still achieve a reasonable level of performance for the cable modems in the service group.</p>
1e	selecting, by said CMTS, one or more physical layer communication parameter to be used for communicating with said one of said plurality of service groups based on said composite SNR-related metric; and	<p>The CMTS and/or CCAP select one or more physical layer communication parameter to be used for communicating with said one of said plurality of service groups based on said composite SNR-related metric.</p> <p>Specifically, the CMTS and/or CCAP select one or more physical layer communication parameters to be used for communicating, via a physical layer, with each service group of downstream modems. For example, the CMTS and/or CCAP select one or more physical communication parameters that control modems in the various upstream channels, which have been configured via the modulation profiles. For example, when adding additional forward error correction to attempt to correct for</p>

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		upstream errors is no longer efficient, a lower modulation rate (e.g. a physical layer communication parameter) can be applied to a particular service group.
1f	communicating, by said CMTS, with one or more cable modems corresponding to said one of said plurality of service groups using said selected one or more physical layer communication parameter.	<p>The CMTS and/or CCAP communicate with one or more cable modems corresponding to said one of the plurality of service groups using the selected one or more physical layer communication parameter.</p> <p>Specifically, Cox communicates, via its CMTSs and/or CCAPs, messages that include parameters that control cable modems in one of said plurality of service groups in the various upstream channels. These communications utilize the selected one or more physical layer communication parameters.</p>